Chapter 6 Questions

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| 1. How are the elements originally sorted into groups? | 1. Elements are sorted into groups using their chemical and physical properties. |
| 1. How did Mendeleev organized the periodic table? | 1. Mendeleev arranged the elements in his periodic table in order of increasing atomic mass. |
| 1. How is the organization of Mendeleev’s periodic table different than today’s? | 1. Mendeleev used atomic mass, we use atomic number. |
| 1. How was Mendeleev able to predict the properties of ‘missing’ elements? | 1. Mendeleev based their properties on the properties of other elements in their group. |
| 1. List three properties of metals | 1. Answers include: good conductor of heat, good conductor of electricity, high luster or sheen. |
| 1. List the three classes of elements | 1. Metal, nonmetal, and metalloids |
| 1. List three properties of nonmetals | 1. Answers include : not good conductor of heat, not good conductor of electricity, brittle solids, gases |
| 1. List three elements that are nonmetals | 1. Answers include: hydrogen, helium, carbon, oxygen, nitrogen, fluorine, neon, phosphorus, sulfur, chlorine, argon, selenium, bromine krypton, iodine, xenon, and radon. |
| 1. List three elements that are metalloids | 1. Answers include: boron, silicon, germanium, arsenic, selenium, tellurium, and astaline |
| 1. Name two members of the alkali metal family | 1. Answers include: Lithium, sodium, potassium, rubidium, cesium, and francium |
| 1. Name two members of the alkaline earth metal family | 1. Answers include: beryllium, magnesium, calcium, strontium, barium, radium |
| 1. Name two members of the carbon family | 1. Answers include: carbon, silicon, germanium, tin, lead, and ununquadium |
| 1. Name two members of the nitrogen family | 1. Answers include: nitrogen, phosphorus, arsenic, antimony, and bismuth |
| 1. Name two members of the oxygen family | 1. Answers include: Oxygen, sulfur, selenium, tellurium, and polonium |
| 1. Name two members of the halogen family | 1. Answers include: Fluorine, chlorine, bromine, iodine, and astatine |
| 1. Name two members of the noble gas family | 1. Answers include: helium, neon, argon, krypton, xenon and radon |
| 1. How does atomic size change as you go down a family? | 1. Atomic size increases as you go down a family. |
| 1. How does atomic size change as you go across a period? | 1. Atomic size decreases as you go across a period. |
| 1. How does ionic size change as you go down a family? | 1. Ionic size increases as you go down a family. |
| 1. How does ionic size change as you go across a period? | 1. Ionic size decreases until you get to the stairstep, where it increases greatly, but then decreases again. |
| 1. How does first ionization energy change as you go down a family? | 1. First ionization energy decreases as you go down a family. |
| 1. How does first ionization energy change as you go across a period? | 1. First ionization energy increases as you go across a period. |
| 1. How does elecronegativity change as you go across a period? | 1. Electronegativity increases as you go across a period (Excepting group 18.) |
| 1. How does elecronegativity change as you go down a group? | 1. Elecronegativity decreases as you go down a group. |
| 1. What is the difference between an atom and an ion? | 1. An atom is neutrally charged (it has the same number of electrons and protons), where an ion is electrically imbalanced (it has a different number of electrons and protons) |
| 1. List three pieces of information that the periodic table tells us about each element. | 1. Answers include: Name, chemical symbol, atomic number, and average atomic mass. |
| 1. What is the difference between a cation and an anion? | 1. Cations have a positive charge and anions have a negative charge. |
| 1. In general, what type of elements form cations? | 1. Metals form cations. |
| 1. In general, what type of elements form anions? | 1. Nonmetals form anions. |
| 1. List two things are similar in all members of a group. | 1. Answers include: similar chemical properties, similar physical properties, similar electron configuration |